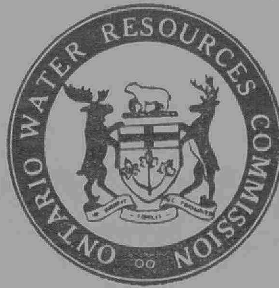


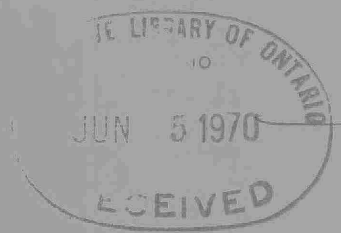
CA2 ON
WR 610
1969
T21



O.W.R.C.
Water Pollution
Survey

THE
ONTARIO WATER RESOURCES
COMMISSION

EXTRA COPY



WATER POLLUTION SURVEY

of the

TOWNSHIP Of TECK

District Of Timiskaming

1969

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CADON
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Report

on a

Water Pollution Survey

of the

TOWNSHIP OF TECK

District of Timiskaming

January 1969

District Engineers Branch

Division of Sanitary Engineering

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R E P O R T

ONTARIO WATER RESOURCES COMMISSION

I INTRODUCTION

A water pollution survey of the Township of Teck was made during 1968.

The investigation was concerned with the updating of information contained in the OWRC survey report of October 1963, and the appended sample results can be considered supplementary to the former investigation.

II PREVIOUS RECOMMENDATIONS AND ACTION TAKEN

The previous report recommended that more adequate sewage treatment works should be provided for the Kirkland Lake area of the Township of Teck.

The township has retained the services of Toronto Consulting Engineers, Crysler, Davis and Jorgensen, in association with Sutcliffe Company of New Liskeard, to report on the most suitable type of sewage treatment.

The report has been received and is now being reviewed by the various divisions within the Commission. It is hoped that the recommendations contained in the report will be carried out immediately, so that the much-needed sewage treatment facilities will be available soon.

III SEWAGE TREATMENT

The inadequacy of the present sewage treatment system in Kirkland Lake has been pointed out in previous reports.

A total of 11 sedimentation tanks are utilized to treat the sewage from the communities of Kirkland Lake, Chaput Hughes and Swastika. None of these units produce an effluent suitable for discharge to a watercourse.

The results of the samples collected during this survey show the gross pollution of the receiving streams by the inadequately treated septic tank effluents. These effluents were extremely high in BOD values, suspended solids, phenols and coliforms.

The discharges contained such a high degree of pollution-causing material that coliform counts in excess of 50 times the OWRC objective were evident approximately three miles downstream. Furthermore, samples from the section of Murdock Creek between septic tanks numbers 2 and 6 indicate BOD values of 48 ppm to 82 ppm, 12 to 20 times the established objective for surface waters.

It is noted that some raw sewage is bypassed to the Blanche River whenever septic tank No. 1 is being cleaned. This practice should be eliminated.

In the municipalities of Kirkland Lake, Chaput Hughes and Swastika there are certain areas to which municipal sanitary sewers are not provided. Approximately 12 percent of the homes in

Kirkland Lake are not connected to the municipal sewage system. In Chaput Hughes there are 37 homes located on the Pullsifer property which have serviced water but no municipal sewerage connection. There are a number of houses in the Hayes Street area of Swastika with no sewer or water services. Approximately half of these homes are equipped with septic tanks while the other half use outside privies.

Also underway in the township is an Urban Renewal Study. This study is taking into consideration the feasibility of sewerage connections to the homes of Kirkland Lake and Chaput Hughes that are not connected to the municipal sewage system. The complete report on this investigation is also expected to be finalized this year.

Action is being taken to correct the lack of sewerage connections to homes on the Pullsifer property in Chaput Hughes.

IV RESULTS OF SAMPLE ANALYSES

(1) Sample Point 1-W

This is a discharge from an 18-inch corrugated pipe located on the north-west side of septic tank No. 7 on Water Street. The liquid was black with excessively high coliform counts, BOD values, solids and phenols shown by the analysis of samples taken. These results would seem to indicate that the discharge is from a service station in the area. This source of pollution should be located and action taken to eliminate it.

(2) Sample Point 4-W

This sampling point is a discharge from a 12-inch corrugated pipe outfall located approximately 15 feet from the north-east side of septic tank No. 7 on Water Street. Analysis results of samples taken indicate excessive BOD values, suspended solids and coliform count. The discharge was foamy and appeared to contain oil.

V COMMUNITY PLANNING

The Township of Teck should continue its efforts to adopt an Official Plan approved by the Minister of Municipal Affairs, to govern the future development of the township. Consultants are presently working on an Official Plan.

VI REFUSE DISPOSAL

The refuse disposal site located at Gami Lake approximately 12 miles north of Kirkland Lake is operated for the Township of Teck and serves the communities of Kirkland Lake and Chaput Hughes.

Due to the proximity of the site to the shore of Gami Lake it was noted that garbage was being dumped into the lake itself. It is apparent that due to this condition leachate from the refuse could gain access to the lake water making the site a highly potential pollution source.

Therefore, efforts should be made to locate a more suitable site for the disposal of the community garbage.

VII SUMMARY AND CONCLUSIONS

This is a report on a water pollution survey of the Township of Teck which updates the information contained in the OWRC survey report of October 1963.

Gross pollution of Murdock Creek is occurring downstream from Kirkland Lake.

The main pollution problem which remains in the communities of Kirkland Lake, Chaput Hughes and Swastika is the inadequately treated sewage flowing from the septic tank systems into the surrounding surface waters.

The Township of Teck has undertaken an investigation into the design of a suitable sewage treatment plant for the community of Kirkland Lake. No action has been taken to improve the sewage treatment facilities of Chaput Hughes and Swastika.

The present site for the disposal of refuse for the Township of Teck is unsuitable as it could allow contaminating material from the dump to enter directly into Gami Lake, thus giving cause for pollution. This site should be changed to a more suitable location.

VIII RECOMMENDATIONS

1. The active pollution control programme being conducted in Kirkland Lake should be carried through to the realization of the proposed sewage treatment plant.

2. Programmes to provide for adequate sewage treatment in the communities of Chaput Hughes and Swastika should be initiated.

3. The sources of the pollution in the discharges from the two sewer outfalls behind septic tank No. 7 should be located and eliminated.

4. The Township of Teck should continue its efforts to adopt an Official Plan approved by the Minister of Municipal Affairs.

5. Efforts should be made to locate a more suitable site for the disposal of the community refuse.

/elc

Prepared by:


J.D. Snider,
Engineers Assistant,
Div. of Sanitary Engineering.

APPENDIX I

SIGNIFICANCE OF LABORATORY ANALYSES

Bacteriological Examination

The presence of coliforms indicates pollution from human or animal excrement, or from some non-faecal forms. The objectives for surface water quality in Ontario is a maximum of 2400 organisms per 100 millilitres.

The OWRC Laboratories employ the Membrane Filter (MF) technique of examination to obtain a direct enumeration of coliform organisms. The Department of Health Laboratories use the Most Probable Member (MPN) enumeration and coliform counts are reported as Total Coliform Organisms (TC) and Faecal Coliform Organisms (FC).

Sanitary Chemical Analyses

Biochemical Oxygen Demand (BOD)

Biochemical Oxygen Demand is reported in parts per million (PPM) and is an indicated of the amount of oxygen required for the stabilization of decomposable organic or chemical matter in water. The completion of the laboratory test required five days, under the controlled incubation temperature of 20° Centigrade.

The OWRC objective for surface water quality is an upper limit of four (4) ppm.

Solids

The value for solids, expressed in parts per million, is the sum of the values for the suspended and the dissolved matter in the water. The concentration of suspended solids is generally

the most significant of the solids analyses with regard to surface water quality. The effects of suspended solids in water are reflected in difficulties associated with water purification, decomposition in streams and injury to the habitat of fish.

Nitrogen

Ammonia Nitrogen or sometimes called free ammonia is the insoluble product in the decomposition of nitrogenous organic matter. It is also formed when nitrates and nitrites are reduced to ammonia either biologically or chemically. Some small amounts of ammonia, too, may be swept out of the atmosphere by rain water.

The following values may be of general significance in appraising free ammonia content: Low 0.015 to 0.03 ppm; moderate 0.03 to 0.10 ppm; high 0.10 or greater.

Total Kjeldahl is a measure of the total nitrogenous matter present except that measured as nitrite and nitrate nitrogens. The Total Kjeldahl less the Ammonia Nitrogen measures the organic nitrogen present. Ammonia and organic nitrogen determinations are important in determining the availability of nitrogen for biological utilization. The normal range for Total Kjeldahl would be 0.1 to 0.5 ppm.

Nitrite Nitrogen

Nitrite is usually an intermediate oxidation of ammonia. The significance of nitrites, therefore, varies with their amount, sources, and relation to other constituents of the

sample, notably the relative magnitude of ammonia and nitrite present. Since nitrite is rapidly and easily converted to nitrate, its presence in concentrations greater than a few thousandths of a part per million is generally indicative of active biological processes in the water.

Nitrate Nitrogen

Nitrate is the end product of aerobic decomposition of nitrogenous matter, and its presence carries this significance. Nitrate concentration is of particular interest in relation to the other forms of nitrogen that may be present in the sample. Nitrates occur in the crust of the earth in many places and are a source of its fertility.

The following ranges in concentration may be used as a guide: low less than 0.1 ppm; moderate 0.1 to 1.0 ppm; high greater than 1.0 ppm.

Anionic Detergents as ABS

The presence of anionic detergents as ABS is an indication that domestic waste is present.

Phenols

The presence of phenol or phenolic equivalents is generally associated with discharges containing petroleum products, or with wastes from some industries. It is generally conceded that adequate protection of surface waters will be provided if the concentration of phenols in waste discharges does not exceed

20 parts per billion (ppb). Phenolic type waste can cause objectionable conditions in water supplies and might taint the flesh of fish.

Iron

Water for domestic use should contain less than 0.3 parts per million of iron in order to avoid objectionable tastes, staining and sediment formation. Iron concentrations of not greater than 17 parts per million in waste discharges should permit adequate protection of surface waters.

TOWNSHIP OF TECK

KIRKLAND LAKE - MURDOCK CREEK

TABLE 1

SAMPLING POINT NO.	DESCRIPTION	DATE	5-DAY	SOLIDS			MPN		PHENOLS IN PPB	ESTIMATED FLOW	COMMENTS
			BOD (PPM)	TOTAL (PPM)	SUSP. (PPM)	DISS. (PPM)	TOTAL COLIFORM ORGANISMS	FAECAL COLIFORM ORGANISMS			
OB 570.7	BLANCHE R. AT ROSEGRAVE.	MAY 28/68	1.5	136	23	113	17,000	1,200			
		AUG.28/68	1.1	138	19	119	1,300	180			
OBU 578.7	MURDOCK CREEK AT HWY. 112.	MAY 28/68	6.2	172	11	161	110,000+	110,000+			
		AUG.28/68	6.4	244	15	229	110,000+	110,000+			
OBU 581.68	MURDOCK CREEK DOWN- STREAM FROM KIRKLAND LAKE.	MAY 28/68	57.0	266	60	206	110,000+	110,000+			
		AUG.28/68	68.0	250	42	208	110,000+	110,000+	20		
OBU 581.70	EFFLUENT SEPTIC TANK NO. 6.	MAY 29/68	74.0	338	80	258	110,000+	110,000+			
		AUG.28/68	150.0	306	78	228					
OBU 581.73	STORM SEWER OUTFALL FROM WOODS ST. JUST UPSTREAM OF SEPTIC TANK NO. 6.	AUG.27/68	8.0	779	33	746					
OBU 581.87	MURDOCK CREEK DOWN- STREAM FROM "TUNNEL" SEWER OUTFALL.	AUG.27/68	82.0	284	65	219			70		
OBU 581.92-T	TUNNEL SEWER DISCHARGE TO MURDOCK CREEK.	MAY 29/68	53.0	270	70	200	110,000+	110,000+			
		AUG.27/68	98.0	326	65	261			12		
OBU 581.97	RAND CREEK UPSTREAM FROM POINT OF ENTRY TO MURDOCK CREEK.	MAY 29/68	1.0	122	2	120	110,000+	110,000+			
		AUG.27/68	1.6	112	3	109					

TABLE 1 (CONTD)

SAMPLING POINT NO.	DESCRIPTION	DATE	5-DAY	SOLIDS			M.F. COLIFORM	MPN		PHENOLS	ESTIMATED	COMMENTS
			BOD (PPM)	TOTAL (PPM)	SUSP. (PPM)	DISS. (PPM)	COUNT PER 100 ML	TOTAL COLIFORM ORGANISMS	FAECAL COLIFORM ORGANISMS	IN PPB	FLOW	
0BU 582.1-T	EFFLUENT SEPTIC TANK NO. 1, 2 AND 5.	MAY 29/68	76.0	386	93	293		110,000+	110,000+	80		
		AUG. 27/68	110.0	396	99	297						
0BU 582.19-W	STORM SEWER OUTFALL AT INTERSECTION OF QUEEN ST. AND LEBEL AVE.	AUG. 27/68	4.0	594	48	546						5
0BU 582.21	MURDOCK CREEK DOWN- STREAM FROM SEPTIC TANK NO. 1.	AUG. 27/68	2.4	146	5	141						
0BU 582.27	MURDOCK CREEK UP- STREAM FROM SEPTIC TANK NO. 1.	AUG. 27/68	1.2	158	9	149						
0BU 582.37-E	MURDOCK CREEK AT EAST SIDE OF PROSPECT AVE. UP- STREAM OF PROSPECT OUTFALL.	MAY 30/68	48.0	698	141	557	270					
		AUG. 27/68	2.1	124	5	119						
0BU 582.37-W	MURDOCK CREEK AT WEST SIDE OF PROSPECT AVE. DOWNSTREAM OF PROSPECT OUTFALL.	AUG. 27/68	1.9	152	12	140						
0BU 582.62	MURDOCK CREEK AT CARTER AVE.	MAY 30/68	1.4	234	6	228	220					

TABLE I (CONTD)

SAMPLING POINT NO.	DESCRIPTION	DATE	5-DAY	SOLIDS		DISS.	M.F. COLIFORM COUNT PER 100 ML	MPN		PHENOLS IN PPB	ESTIMATED FLOW	COMMENTS
			BOD (PPM)	TOTAL (PPM)	SUSP. (PPM)			TOTAL COLIFORM ORGANISMS	FAECAL COLIFORM ORGANISMS			
OBU 583.02 D	DITCH FROM ALLEN AVE. AT POINT OF ENTRY TO MURDOCK CREEK.	AUG. 26/68	1.7	160	3	157		5,200	500			
OBU 583.14	MURDOCK CREEK NEAR WATER WORKS.	AUG. 26/68	1.4	120	2	118		5,300	100			
OBU 583.20	MURDOCK CREEK AT TRANSMISSION LINE.	MAY 30/68	3.0	568	11	557	50					
OBU 583.24 W	STORM OUTFALL AT FOOT OF FOURTH ST.	AUG. 26/68										NO FLOW
OBU 583.41 W	STORM OUTFALL AT FOOT OF TOWER ST.	MAY 30/68 AUG. 26/68	24 2.8	500 368	21 5	479 363	1,100	1,500	200		<5	
OBU 583.46 W	STORM OUTFALL AT FOOT OF FIRST ST.	MAY 30/68 AUG. 26/68										NO FLOW
OBU 583.80 W	STORM OUTFALL OFF NORTHLAND BLVD. WEST OF BURNSIDE DR.	AUG. 26/68	2.6	492	5	487		2,800	600		<5	
OBU 583.9 W	STORM OUTFALL OF NORTHLAND BLVD. JUST EAST OF STATION RD.	AUG. 26/68	4.4	636	77	559		2,800	600		<5	
1-W	18" C.I.P. OUTFALL BEHIND SEPTIC TANK NO. 7.	MAY 30/68 AUG. 26/68	60.0 82.0	402 500	145 35	257 465	130,000	110,000+	600	100	<5 5	ONLY OILY

TABLE I (CONTD)

SAMPLING POINT NO.	DESCRIPTION	DATE	5-DAY BOD (PPM)	SOLIDS			M.F. COLIFORM COUNT PER 100 ML	MPN		PHENOLS IN PPB	ESTIMATED FLOW	COMMENTS
				TOTAL (PPM)	SUSP. (PPM)	DISS. (PPM)		TOTAL COLIFORM ORGANISMS	FAECAL COLIFORM ORGANISMS			
2-R	OVERFLOW FROM SEPTIC TANK NO. 7.	MAY 30/68 AUG. 26/68										NO FLOW NO FLOW
3-W	12" C.I.P. OUTFALL BEHIND SEPTIC TANK NO. 7.	MAY 30/68 AUG. 26/68	4.4	478	29	449		6,300	3,200		< 5	NO FLOW OILY-CHEMICAL SMELL
4-W	12" C.I.P. OUTFALL BEHIND SEPTIC TANK NO. 7.	MAY 30/68 AUG. 26/68	48.0 13.0	698 358	141 12	557 346	780,000,000				< 5 < 5	OILY FOAMY
								110,000+	110,000+			

TOWNSHIP OF TECK

SWASTIKA - BLANCHE RIVER

TABLE 2

<u>SAMPLING POINT NO.</u>	<u>DESCRIPTION</u>	<u>DATE</u>	<u>5-DAY BOD (PPM)</u>	<u>TOTAL (PPM)</u>	<u>SUSP. (PPM)</u>	<u>DISS. (PPM)</u>	<u>TOTAL COLIFORM ORGANISMS</u>	<u>FAECAL COLIFORM ORGANISMS</u>	<u>ESTIMATED FLOW</u>	<u>COMMENTS</u>
QB 578.4	BLANCHE RIVER AT MOUTH TO OTTO LAKE.	MAY 28/68 AUG.28/68	1.4 0.6	88 102	8 5	80 97	26,000 3,300	106 1,300		
QB 579.5-D	DITCH CROSSING HWY.66 TO BLANCHE RIVER.	MAY 28/68 AUG.28/68	0.6 1.6	122 164	3 11	119 153	14,000 1,800	588 1,000		
QB 579.8-T	EFFLUENT SEPTIC TANK NO. 2 - SWASTIKA.	MAY 28/68 AUG.28/68	53.0 1.0	406 94	60 7	346 87	110,000+ 4,200	110,000+ 3,800		
QB 579.96	BLANCHE RIVER JUST DOWNSTREAM OF SEPTIC TANK NO. 1.	MAY 28/68 AUG.28/68	0.8 0.8	96 96	9 7	87 89	900 7,200	10 6,600		
QB 579.96- W-N	STORM OUTFALL AT NORTH SIDE OF BRIDGE (CONROY AVE.) OVER BLANCHE RIVER.	MAY 28/68 AUG.28/68								NO FLOW NO FLOW
QB 579.96- W-S	STORM OUTFALL AT SOUTH SIDE OF BRIDGE (CONROY AVE.) OVER BLANCHE RIVER.	MAY 28/68 AUG.28/68								NO FLOW NO FLOW
QB 579.99-W	STORM OUTFALL DOWN- STREAM FROM SEPTIC TANK NO. 1 (SWASTIKA) ON BLANCHE RIVER.	AUG.28/68					120	12		

TABLE 2 (CONTD)

SAMPLING POINT NO.	DESCRIPTION	DATE	5-DAY	SOLIDS			MPN		ESTIMATED FLOW	COMMENTS
			BOD (PPM)	TOTAL (PPM)	SUSP. (PPM)	DISS. (PPM)	TOTAL COLIFORM ORGANISMS	FAECAL COLIFORM ORGANISMS		
08 580.0-T	EFFLUENT SEPTIC TANK NO. 1 (SWASTIKA)	MAY 28/68	30.0	268	47	221	110,000+	110,000+		
		AUG. 28/68	30.0	228	42	186	110,000+	110,000+		
08 580.02-W	STORM OUTFALL UP- STREAM FROM SEPTIC TANK NO. 1 (SWASTIKA) ON BLANCHE RIVER.	MAY 28/68	.							NO FLOW
		AUG. 28/68	.							NO FLOW
08 580.20	BLANCHE RIVER UPSTREAM FROM SWASTIKA AT WATER WORKS.	MAY 28/68	1.1	108	9	99	1,700	2		
		AUG. 28/68	0.9	96	5	91	24	24		
08A 580.8	AMIKOUGAMI CREEK AT HWY. 66.	MAY 28/68	0.9	148	16	132	2,700	30		
		AUG. 28/68	0.7	140	9	131	36	12		

TOWNSHIP OF TECK

CHAPUT HUGHES - AMIKOUGAMI CREEK

TABLE 3

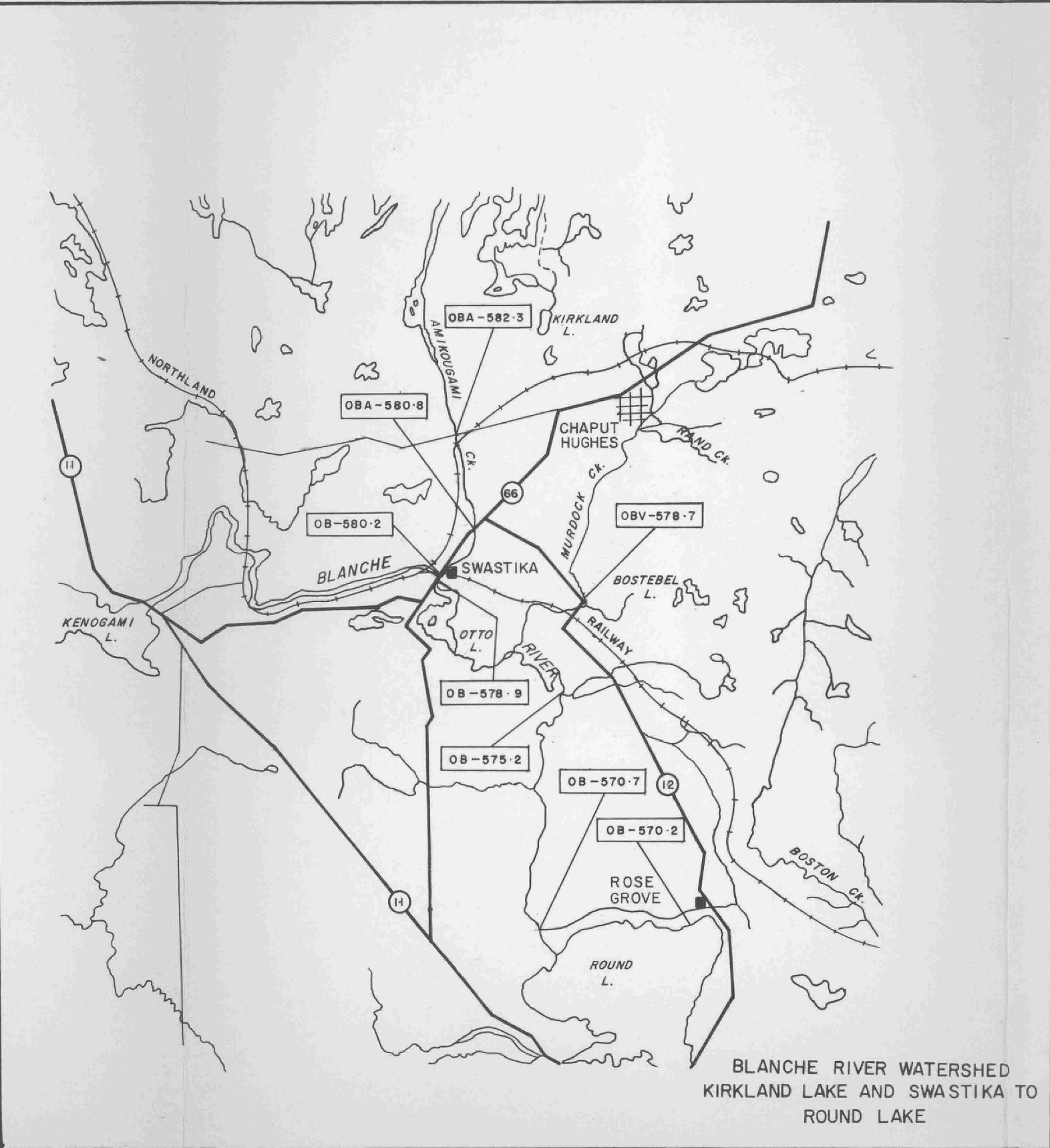
SAMPLING POINT NO.	DESCRIPTION	DATE	5-DAY BOD (PPM)	SOLIDS			MPN		ESTIMATED FLOW	COMMENTS
				TOTAL (PPM)	SUSP. (PPM)	DISS. (PPM)	TOTAL COLIFORM ORGANISMS	FAECAL COLIFORM ORGANISMS		
OBA 582.3	AMIKOUGAMI CREEK AT ROAD NORTH OF HWY. 66.	MAY 28/68	1.0	114	10	104	14,000	26		
		AUG.28/68	0.9	122	4	118	2,600	10		
T-1	EFFLUENT SEPTIC TANK NO. 9.	MAY 27/68	80.0	482	92	390	110,000+	110,000+		
		AUG.28/68	17.0	302	20	282	110,000+	110,000+		
D-1	SMALL STREAM AT OUT- LET OF POND UPSTREAM OF SEPTIC TANK NO. 8 EFFLUENT DISCHARGE.	MAY 27/68	2.5	208	4	204	2,200	16		
		AUG.28/68	2.0	102	3	99				
T-2	EFFLUENT SEPTIC TANK NO. 8.	MAY 27/68	23.0	232	49	183	110,000+	110,000+		
		AUG.27/68	45.0	194	35	159	110,000+	110,000+		
D-2	SMALL STREAM 200 FT. DOWNSTREAM OF SEPTIC TANK NO. 8 EFFLUENT DISCHARGE DRAINING TO MURDOCK CREEK.	MAY 27/68	21.0	250	31	219	110,000+	110,000+		
		AUG.27/68	0.7	140	9	131				

TOWNSHIP OF TECK

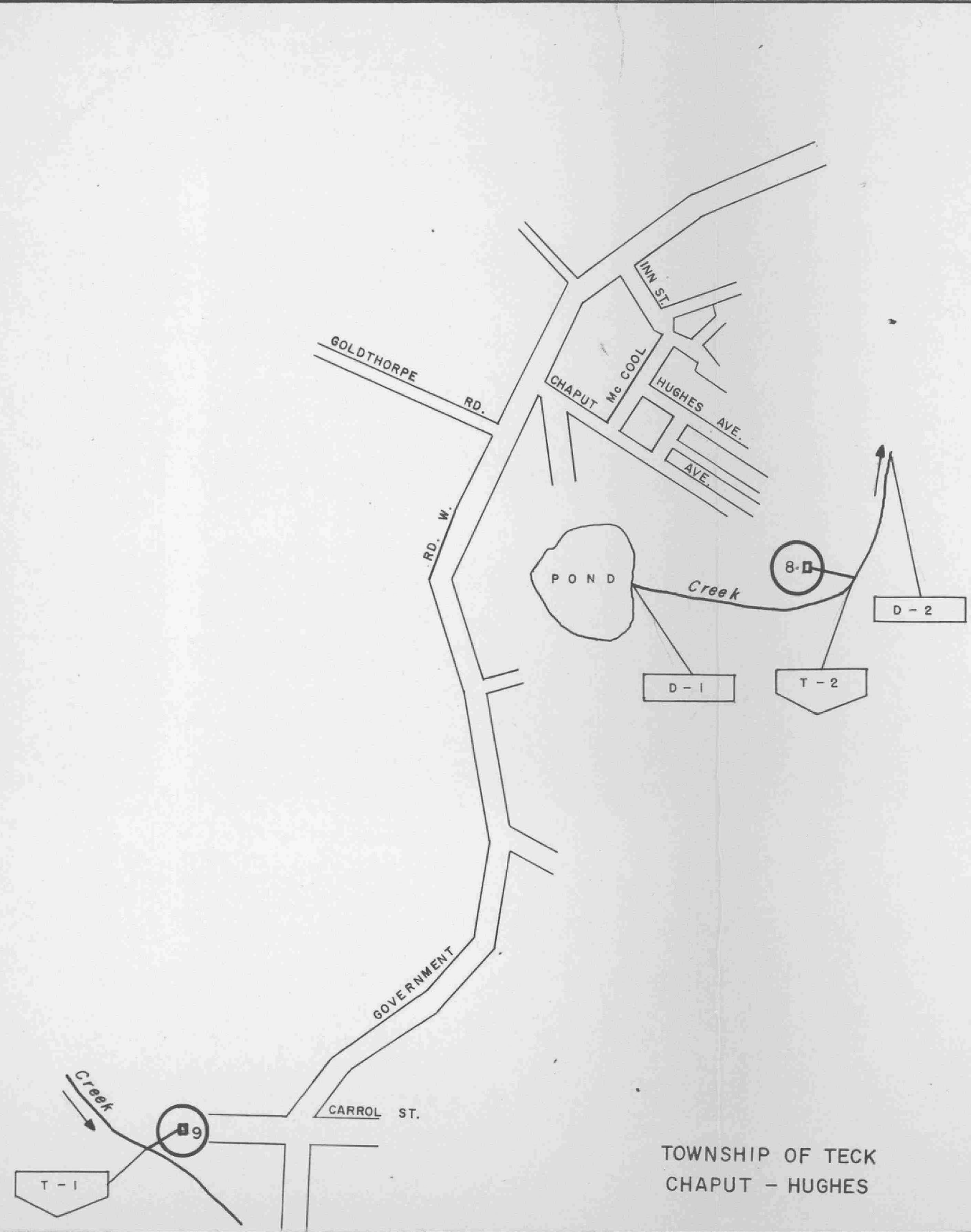
SEPTIC TANK DATA

TABLE 4

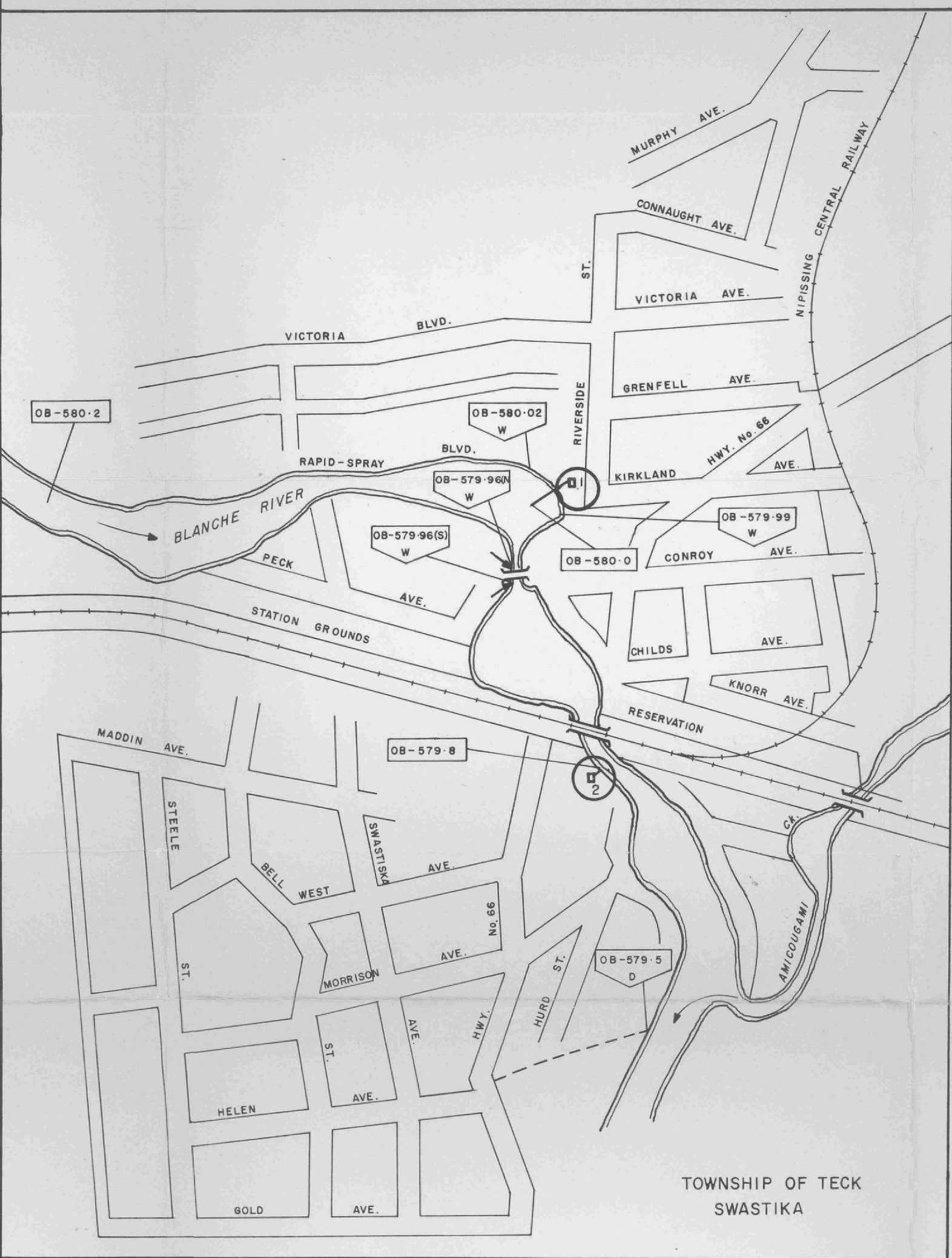
<u>TANK NO.</u>	<u>LOCATION</u>	<u>DESCRIPTION</u>	<u>OUTLET</u>	<u>POSSIBLE BYPASS OR OVERFLOW</u>	<u>REMARKS</u>
1	KIRKLAND LAKE BETWEEN QUEEN ST. AND PREMIER AVENUE WEST.	2 EQUAL COMPARTMENTS (158,000 GAL.).	27" Ø SEWER TO MURDOCK CREEK AT RAND AVENUE WEST (080-581.52).	YES (EFFLUENT)	UNSATISFACTORY
2	KIRKLAND LAKE AT CARTER ST. AND BALSAM AVENUE.	2 EQUAL COMPARTMENTS (52,500 GAL.).	24" Ø AND 27" Ø SEWERS TO MURDOCK CREEK AT RAND AVENUE WEST.	NO	UNSATISFACTORY
3	KIRKLAND LAKE AT COMFORT AND PRINCE STS.	3 EQUAL COMPARTMENTS (175,000 GAL.).	TUNNEL SEWER TO MURDOCK CREEK .	NO	UNSATISFACTORY
4	KIRKLAND LAKE AT WATER ST. AND DUNCAN AVENUE.	2 COMPARTMENTS (127,000 GAL.).	TUNNEL SEWER TO MURDOCK CREEK .	NO	UNSATISFACTORY
5	KIRKLAND LAKE AT BROOKBANK AND CARTER AVENUES.	4 EQUAL COMPARTMENTS (2 SEPARATE UNITS) (252,000 GAL.).	24" Ø AND 27" Ø SEWERS TO MURDOCK CREEK (SEWERS ALSO CONVEY FLOW FROM CREEK).	PROBABLY	UNSATISFACTORY
6	KIRKLAND LAKE - MAIN ST. AT MURDOCK CREEK.	2 EQUAL COMPARTMENTS (57,500 GAL.).	DIRECTLY TO MURDOCK CREEK.	-	UNSATISFACTORY
7	KIRKLAND LAKE - GOVERNMENT ROAD WEST AND WOODS ST.	4 COMPARTMENTS (36,100 GAL.).	TUNNEL SEWER TO MURDOCK CREEK.	UNKNOWN	UNSATISFACTORY
8	CHAPUT-HUGHES AT CHAPUT AVENUE.	1 COMPARTMENT (50,000 GAL.).	DIRECTLY TO SMALL CREEK TO KIRKLAND LAKE.	YES (AT INLET MANHOLE).	UNSATISFACTORY
9	CHAPUT-HUGHES AT CARROL ST. WEST OF GOVERNMENT ROAD.	1 COMPARTMENT (4,700 GAL.).	DIRECTLY TO CREEK TRIBUTARY TO AMIKOUGAMI RIVER.	YES (AT INLET MANHOLE).	UNSATISFACTORY



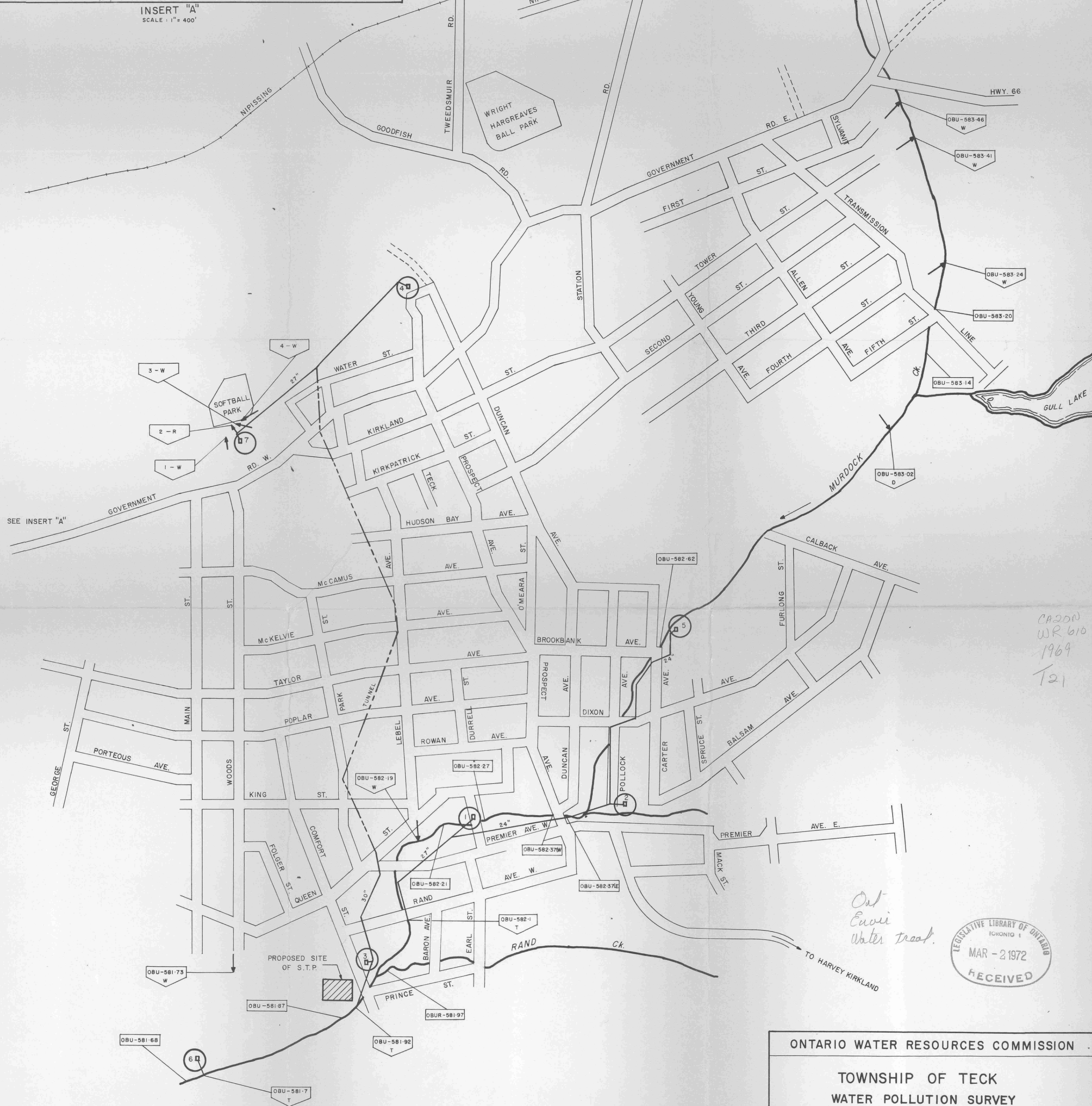
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SCALE: 1" = 2 MI.



INSERT "A"
SCALE: 1" = 400'



INSERT "C"
SCALE: 1" = 350'



TOWNSHIP OF TECK
KIRKLAND LAKE

LEGEND

- OBU-582-62 — STREAM SAMPLING POINT SHOWING MILEAGE
- OB-579-5 — OUTFALL SHOWING STREAM AND MILEAGE
- D — DRAINAGE OR DITCH
- T — TREATMENT PLANT EFFLUENT
- W — STORM SEWER
- — SEPTIC TANK

ONTARIO WATER RESOURCES COMMISSION

TOWNSHIP OF TECK WATER POLLUTION SURVEY 1968

SCALE: 400 200 0 400 800 FEET

DRAWN BY: L.L. BROOME DATE: DECEMBER, 1968

CHECKED BY: J.S. DRAWING No: 68-113



CASD
WR 610
1969
T21

Out
Creek
Water treat.

TO HARVEY KIRKLAND



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